

PLENARY SUMMARY

DESCOPE(S)

- Misregistration
Land Bands Most Critical 0.1
Can Prioritize by Focal Plane
Within Focal Plane +29 (31-32)
Could Relax 7--if pushed

Between Resolution 250-500 (50m) not 100m
needs clarification
- Optimization of Detectors
Segmented Detector - but need better SN
characterization at low temperature
- Emissive Band Accuracy
- 1.38 — Land Supports
- 3.75
 - Saturation @ 500K
 - Move to 3.95 (if possible \$)
Keep same spec.
 - Implications for colocation 21/22

*Anticipate future Descope/Spec. Issues with rapid response time -
advocate MCST give a high priority to end-to-end system simulation -
interdependence of specs and end result of spec changes - We need
balanced specs.

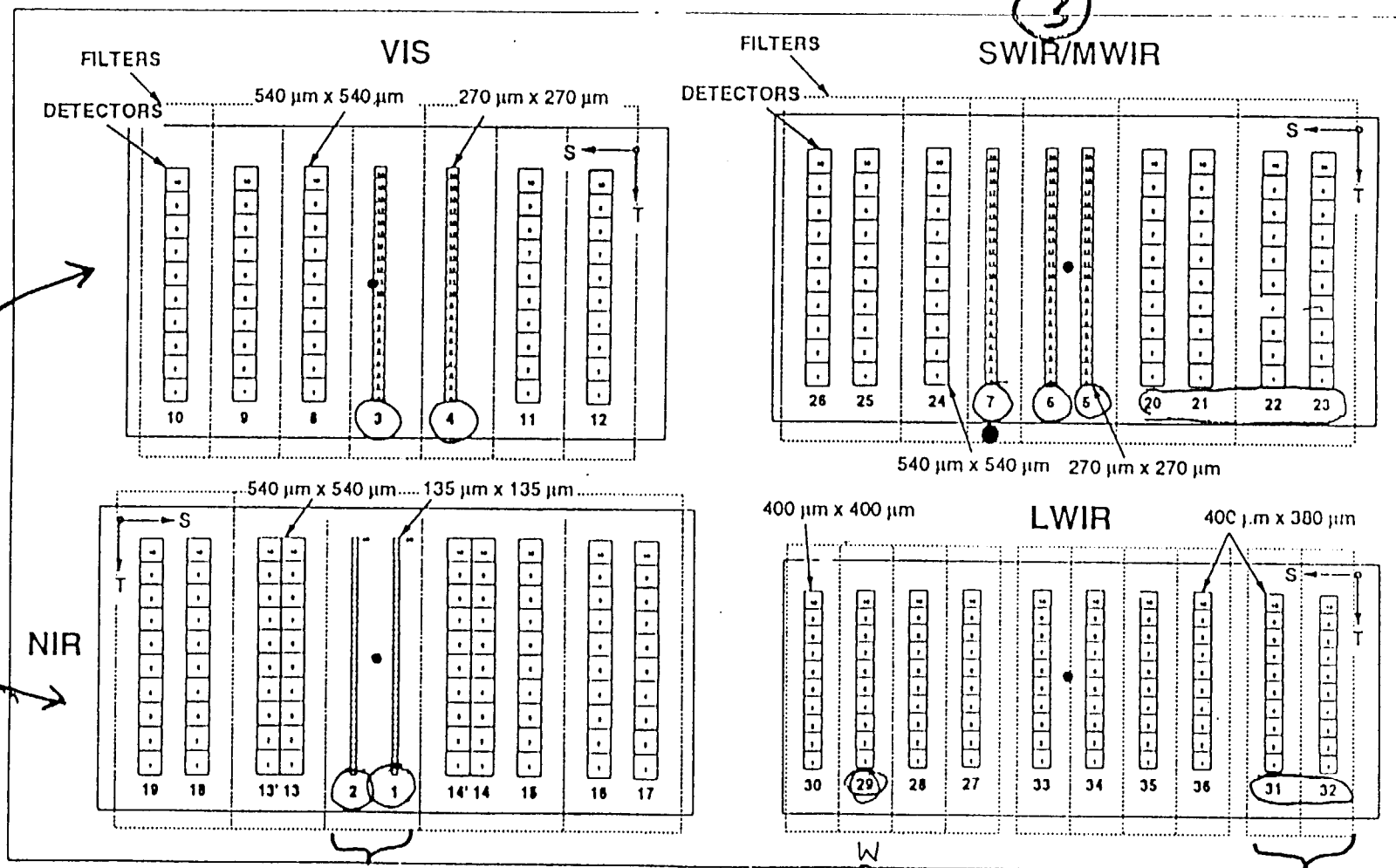
Attachment



MODIS USES FOUR FOCAL PLANE ASSEMBLIES

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Priorities

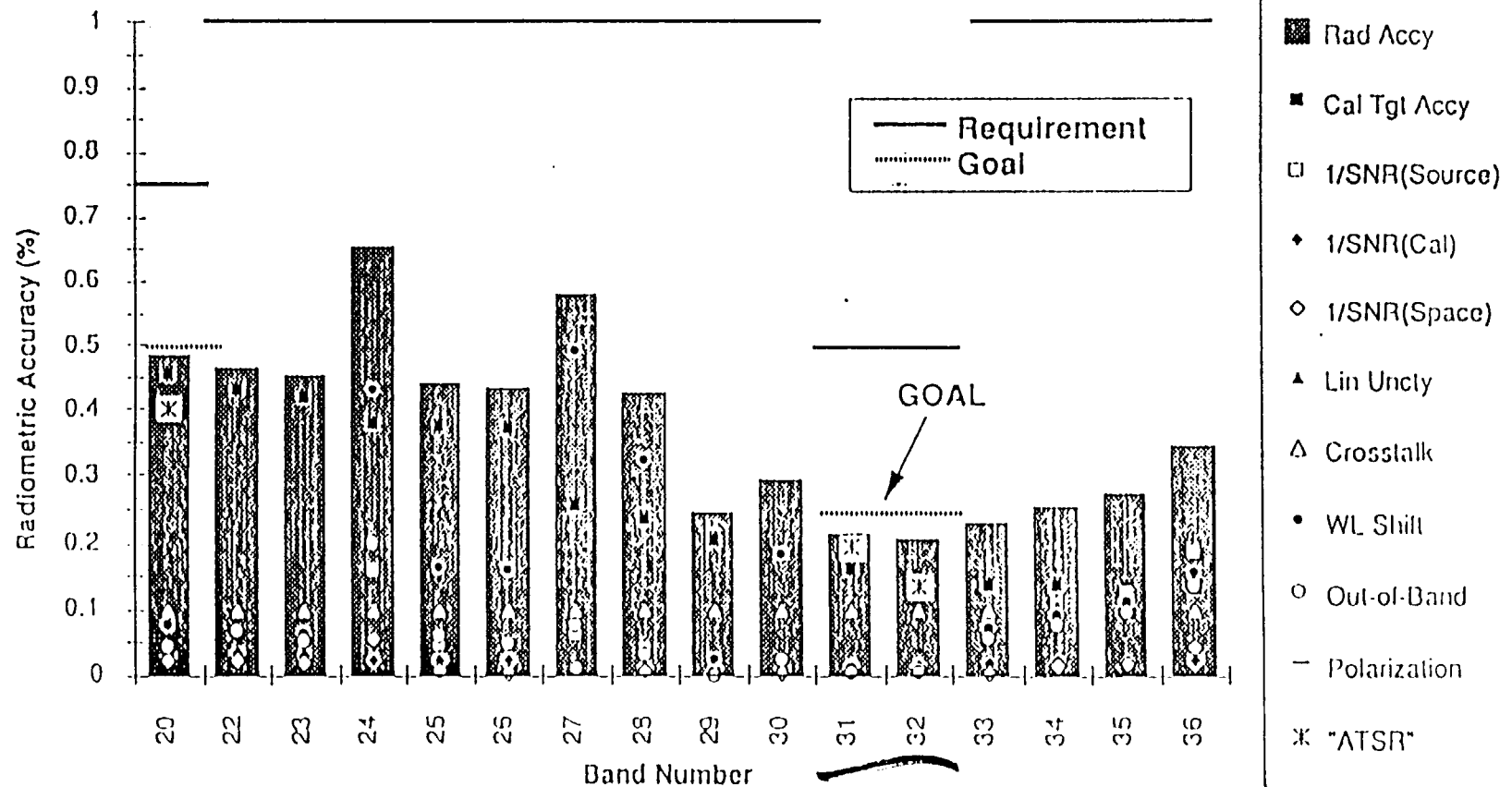
4



IN-FLIGHT EMISSIVE BAND ACCURACY ANTICIPATED TO MEET GOALS

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• Values represent 1 sigma errors, spectrally uncorrected

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92-0620-2400

Comments on MODIS PDR Issues

- I. Radiances received by individual bands should come from a same (distributed) portion of the earth surface (effective pixel) and a corresponding portion of the atmosphere in order to make accurate atmospheric corrections for retrieval of surface geophysical parameters. Otherwise, band-to-band misregistrations mislead atmospheric corrections.

1. suggest to apply a same geometric form for all detectors in the thermal infrared range, at least for band 20, 22, 23, 29, 31 and 32 for surface temperature sensing. *Need detail information of NEΔT and calibration accuracies for selection of 4-strip detector or single-strip detector.*
2. suggest to allocate bands 20, 22, 23, 29, 31 and 32 as close as possible.

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- II. The requirement for specified radiometric calibration accuracies should be considered for each single pixel rather than any sample average.



EMISSIVE BAND IN-FLIGHT RADIOMETRIC ACCURACY ASSUMPTIONS

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SCENE

- 10 SAMPLES AVERAGED OF SCENE DATA
- SCENE UNIFORM ACROSS SAMPLE (NO MTF ERRORS)
- NO SPECTRAL BAND REGISTRATION ERRORS
- NO POLARIZATION ERRORS

BLACKBODY

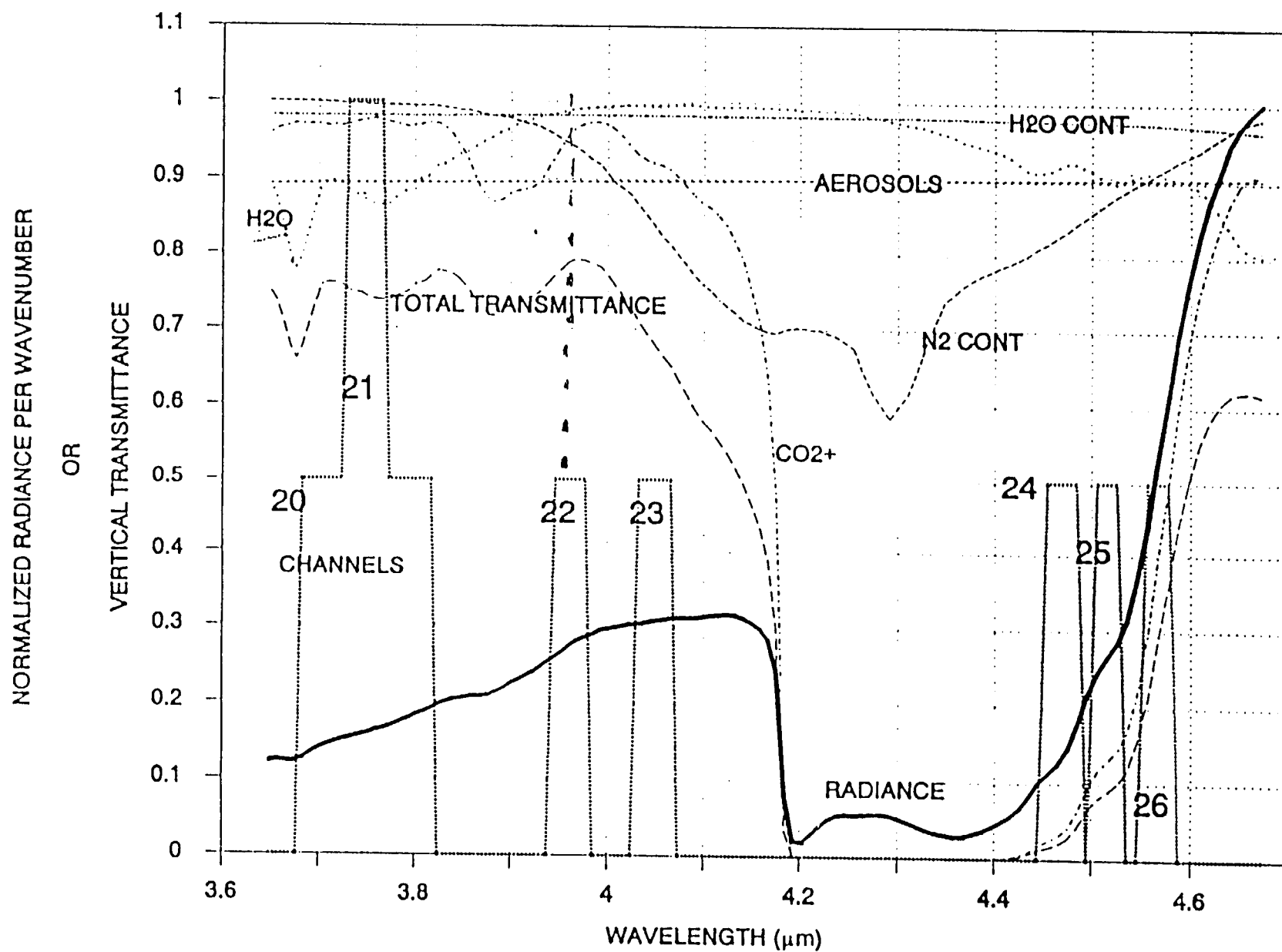
- EMISSIVITY: $0.992 \pm 0.4\%$
- BLACKBODY TEMPERATURE: $295K \pm 0.1K$
- 10 SAMPLES AVERAGED ON BLACKBODY
- NO DIRECT SOLAR ON BLACKBODY
- NO INDIRECT SOLAR ON BLACKBODY (EXCEPT DURING SOLAR CAL)
- EARTHSHINE ON BB: $\Omega = 0.249$ SR, $\theta = 71^\circ$, $T = 295$, $Rho = 20\%$

INSTRUMENT

- INSTRUMENT TEMPERATURE: 293K
- OUT-OF-BAND TRANSMISSION: 0.0001
- CORRELATED WAVELENGTH SHIFT OF SCENE AND BLACKBODY
- WAVELENGTH ACCURACY: 10 nm (Bands 20-26), 20 nm (Bands 27-36)
- CORRELATED OUT-OF-BAND OF SCENE AND BLACKBODY
- CORRELATED INSTRUMENT AND BLACKBODY EMISSIONS
- INTERBAND CROSSTALK: $\leq 0.1\%$ RADIOMETRIC ERROR
- 0.1% KNOWLEDGE OF TRANSFER FUNCTION (LINEARITY)
- 0.2% SCAN MIRROR TOTAL INTEGRATED SCATTER

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Scene-to-Scene Registration Issue

- Critical for Land Group
- Not being given enough attention!
- Platform/instrument/ground processing issue
- Al Fleig to summarize status and options

Inter Instrument Topics

- Locational Accuracy
- Earth Model
- Topographic Data Requirements —> EOSDIS
- Product Commonality

* Possibly need small - MODIS/MISR/ASTER - AIRS?
Meeting in FY93

Peer Review - Modland Suggestion Submitted

- Informal Process
 - Formal Process
- Continuous to Post Launch

Plenary Meetings

- To interact with Instrument/EOSDIS/Project
- Not good for IDS interaction/Team Science
- Not good for MCST interaction

Product Reflection/Refinement - in progress

MODLAND Overview Paper - December, 1992

MODland Peer-Review Strawman

Justice

Recommendation for the MODLAND Peer Review Process

The Peer Review process was seen as a way of engaging the larger community in the design and generation of the Modland algorithms which would benefit the Modland group and the community of potential data users. The peer review should be a continuous process through to algorithm delivery and product generation and validation.

We envision two components to the peer review process, informal and formal.

The Informal Process should consist of regular contacts with IDS science groups, other instrument teams, other agencies, international scientists who either plan to use the Modland algorithms or generate compatible algorithms from other sensing systems or whose data products are needed for the production of Modis products.

Representatives of the above groups should be invited to the Modland Science Team meetings or receive a condensed set of minutes of the meetings. In particular appropriate IDS team members should be encouraged to attend Modland thematic product meetings.

Linkages to the international community should be made through IGBP-DIS to identify international peers involved in research on similar algorithms to those proposed for Modland.

This informal process is being implemented by Modland.

The Formal Process should consist of a series of peer-reviewed scientific papers in the open literature describing the Modland products and their associated algorithms. In addition, peers from the EOS IDS and the International Communities should be selected to attend periodic thematic meetings on Modland Products and to review progress on their algorithm development. These peers should write a brief (1-2 page) report to the Team Leader on the algorithm development as presented at the meeting. This report would then be conveyed directly or in substance to Modland. Peer travel costs would be reimbursed by the Team Leader.